PARTNER
Engineering and Science, Inc.®

LIMITED METHANE INVESTIGATION REPORT

Alewyn Land
9031 Eucalyptus Avenue
Ontario, California 91762

August 31, 2018
Partner Project Number: 18-221384.2

Prepared for:

Prologis
Pier 1, Bay 1
San Francisco, California 94111

Engineers who understand your business

PARTNER
Engineering and Science, Inc.

August 31, 2018

Ms. Janet Frentzel
Prologis
Pier 1, Bay 1
San Francisco, California 94111

Subject: Limited Methane Investigation Report
9031 Eucalyptus Avenue
Ontario, California 90501
Partner Project Number: 18-221384.2

Dear Ms. Frentzel:

Partner Engineering and Science, Inc. (Partner) is pleased to provide the results of the assessment performed on the above-referenced property. The following report describes the field activities, methods, and findings of the Limited Methane Investigation conducted at the above-referenced property.

This assessment was performed utilizing methods and procedures consistent with good commercial or customary practices designed to conform to acceptable industry standards. The independent conclusions represent Partner's best professional judgment based upon existing conditions and the information and data available to us during the course of this assignment.

We appreciate the opportunity to provide these services. If you have any questions concerning this report, or if we can assist you in any other matter, please contact Misty Ponce at (818) 337-1203.

Sincerely,

Partner Engineering and Science, Inc.

Kathy Lehnus
Senior Project Manager

Misty Ponce
Principal

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1.0 INTRODUCTION

1.1 Purpose

Partner Engineering and Science, Inc. (Partner) performed a Phase I Environmental Site Assessment (ESA) dated August 2, 2018, for the property at 9031 Eucalyptus Avenue, Ontario, California (herein referred to as the Site or the subject property). In the Phase I ESA, Partner identified the current and historical use as a dairy farm and recommended subsurface investigation. The purpose of this investigation was to investigate the soil gas on the subject property for the presence of methane in order to provide support for the future commercial/industrial development. Prologis provided project authorization of Partner Proposal Number P18-221384 on August 21, 2018, and the work was conducted under the Master Services Agreement between Prologis and Partner dated April 18, 2013.

1.2 Limitations

This report presents a summary of work conducted by Partner. The work includes observations of site conditions encountered and the analytical results provided by an independent third party laboratory of samples collected during the course of the project. The number and location of samples were selected to provide the required information. However, it cannot be assumed that the limited available data are representative of subsurface conditions in areas not sampled.

Conclusions and/or recommendations are based on the observations, laboratory analyses, and the governing regulations. Conclusions and/or recommendations beyond those stated and reported herein should not be inferred from this document.

Partner warrants that the environmental consulting services contained herein were accomplished in accordance with generally-accepted practices in the environmental engineering, geology, and hydrogeology fields that existed at the time and location of work. No other warranties are implied or expressed.

1.3 User Reliance

Prologis engaged Partner to perform this assessment as set forth by the Master Services Agreement between Prologis and Partner dated April 18, 2013 governing the nature, scope, and purpose of the work as well as other matters critical to the engagement. All reports, both verbal and written, are for the sole use and benefit of Prologis. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with Partner granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against Partner, its officers, employees, vendors, successors or assigns. Any such unauthorized user shall be responsible to protect, indemnify and hold Partner, Client and their respective officers, employees, vendors, successors and assigns harmless from any and all claims, damages, losses, liabilities, expenses (including reasonable attorneys' fees) and costs attributable to such Use. Unauthorized use of this report shall constitute acceptance of and commitment to these responsibilities, which shall be irrevocable and shall apply regardless of the cause of action or legal theory pled or asserted. Additional legal penalties may apply.

This report has been completed under specific Terms and Conditions relating to scope, relying parties, limitations of liability, indemnification, dispute resolution, and other factors relevant to any reliance on this report. Any parties relying on this report do so having accepted the Terms and Conditions for which this report was completed.

2.0 SITE BACKGROUND

2.1 Site Description

The subject property consists of one parcel of land comprising 26.48 acres located on the south side of Eucalyptus Avenue, to the west of Carpenter Avenue, and to the north side of Merrill Avenue within a mixed agricultural and industrial area of the City of Ontario in San Bernardino County.

The subject property is currently occupied by TiVa Dairy #2 for use as a commercial dairy. Approximately 650 cattle are housed in staging areas and feeding corrals. The property is improved with a total of nine cattle shade structures, three hay storage structures, a single-story milk barn, a miscellaneous storage structure, and three single-story, single-family residences. A total of 10 retention ponds for cattle and facility wash water are present on the southern portion of the subject property. Manure produced by cattle is stockpiled in each corral by large tractors, and then transported off the property approximately twice per year to fertilize nearby agricultural fields.

2.2 Site History

According to historical information, the subject property was originally undeveloped in the early 1900s, and was utilized as orchard and agricultural land from at least 1938 to 1967. The current dairy, milk barn, residences, and feed barns were constructed between 1967 and 1975. The shade structures were added by 1985, and the retention ponds were added in the mid-2000s.

The long term use of the subject property as a dairy farm was considered a recognized environmental condition (REC) in the Phase I ESA due to the potential for the build-up of methane, nitrates, and ammonia in soil from animal waste. The City of Ontario has indicated that they require mitigation measures for methane on dairy farms during redevelopment activities. This Limited Methane Investigation Report serves to assess that concern.

2.3 Geology and Hydrogeology

The subject property is situated within the Peninsular ranges of the geomorphic province of the State of California. The Peninsular range is a series of ranges separated by northwest-trending valleys and traversed by several major active faults. The Whittier-Elsinore, San Jacinto, Newport-Inglewood, and San Andreas faults are major active fault systems located in the vicinity of the subject property. Major tectonic activity associated with these and other faults within this regional tectonic framework are typically right-lateral strike-slip movements. The Peninsular ranges extend into lower California, are bound to the east by the Colorado River, and extend into the Los Angeles Basin and the island group surrounding the continental shelf.

Based on information obtained from the USDA Natural Resources Conservation Service Web Soil Survey online database, the subject property is mapped as Delhi fine sand (Db). A typical profile of these soils is fine sands from 0 to 18 inches and sand from 18 to 60 inches. Soils are somewhat-excessively drained, with 0 to 2 percent slopes. During Partner's investigation activities, soils encountered at the subject property were observed to generally consist of poorly-graded, fine- and medium-grained sands with trace silt as deep as 15 feet bgs.

According to topographic map interpretation, the direction of groundwater in the vicinity of the subject property is inferred to flow toward the south. The nearest surface water in the vicinity of the subject property is the Cucamonga Creek, located approximately 0.44 miles east of the subject property.

Water is supplied to the subject property via three onsite wells.

No depth to groundwater information was identified for the on-site residential wells at the subject property. The nearest well with available data from the California Department of Water Resources (CDWR) is identified as Well 339689N1176279W001, located approximately 1.2 miles southwest of the subject property. Depth to groundwater has been measured in this well at approximately 70 to 85 feet below ground surface (bgs).

3.0 FIELD ACTIVITIES

The Limited Methane Investigation included the advancement of 6 borings (B1 through B6) and collection of 9 soil gas grab samples for the analysis of methane gas using ASTM D1946 by gas chromatography – thermal conductivity detector (GC/TCD). Field activities took place on August 22 and 24, 2018.

Refer to Table 1 and Section 3.5 for a summary of the borings advanced, sampling schedule, and laboratory analyses for this investigation.

3.1 Preparatory Activities

3.1.1 Utility Clearance

Prior to sampling activities, Partner contacted Underground Service Alert of Southern California (USA/SC) to clear public utility lines as required by law at least 48 hours prior to drilling activities. In addition, Partner advanced each location by hand to at least 3 feet bgs to ensure that any shallow utilities were not damaged.

3.1.2 Permitting

No specific permits were required by regulatory oversight agencies for this limited subsurface investigation.

3.1.3 Health and Safety Plan

Partner prepared and reviewed a site-specific Health and Safety Plan with on-site personnel involved in the project prior to the commencement of drilling activities.

Partner subcontracted with Munoz Direct Push (Munoz) to provide and operate drilling equipment. Munoz, under the direction of Partner, advanced borings B1 through B6 with a truck-mounted Geoprobe Model 540MT direct push rig. Non-dedicated sampling equipment was decontaminated between sample intervals and boring locations to prevent cross-contamination.

3.2 Boring Locations

The soil borings / temporary soil gas probes were installed throughout the subject property spaced to allow for an overall assessment of methane throughout the subject property and within areas suspected to have a high accumulation of methane (e.g. ponds and pen areas).

Some boring placements were modified during the field assessment due to access limitations by the drill rig, although the overall objectives of the sampling event were still met. One of the soil gas borings (B6) was advanced using a hand auger due to access limitations in the retention pond area.

Refer to Figure 2 for a map indicating boring / soil gas point locations.

3.3 Boring Depths

Borings B1, B2, and B4 were advanced to 7 feet bgs, and Boring B6 (hand auger) was advanced to 5 feet bgs. Boring B5 was advanced to 14 feet bgs, and Boring B3 was advanced to a maximum depth of 15 feet bgs in order to assess deeper methane zones.

3.4 Soil Sampling

Soil samples were collected from borings B1 through B6 using a four-foot long by 1.5-inch diameter sampler with a four-foot long acetate liner and sampling point. The sampler was advanced by the direct-push drill rig using four-foot by 1.25-inch diameter hollow rods with the inner rods in place. At approximately one foot above the desired sampling depth, an inner rod was removed and the sampler was advanced to the desired sampling depth to allow undisturbed soil to enter the sampling liner. The sampler was retrieved from the subsurface and the soil-filled liner was removed.

Each acetate liner was marked with the depths and were opened using a pipe-cutter and visually inspected for discoloration, monitored for odors, classified in accordance with the Unified Soil Classification System (Modified). They were also field-screened with a photoionization detector (PID). None of the samples exhibited extreme discoloration or odor, and no elevated PID readings were encountered.

This assessment did not include the analysis of physical soil but rather soil gas.

3.5 Soil Gas Sampling

Partner contracted Jones Environmental, Inc. (Jones) to collect soil gas samples from the temporary soil gas probes. Purging was completed using a pump set at approximately 200 cubic centimeters per minute (cc/min), except if noted differently on the chain of custody record. Three purge volumes were used, as recommended by July 2015 Department of Toxic Substances Control (DTSC)/Regional Water Quality Control Board (RWQCB) guidance documents.

Prior to purging and sampling, probe pressure was measured with a magnehelic gauge able to reach a limit of detection of 0.1 inches of H_2O and recorded in the field logs. No probes were found to be pressurized prior to purging and sampling. A shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system, and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then collected using a glass-tight syringe and containerizing into a Tedlar bag with a sampling rate of approximately 200 cc/min, except if noted differently on the chain of custody record.

A duplicate sample was collected from B3 at 15 feet bgs for quality control.

3.6 Post-Sampling Activities

Probes were removed from the subsurface and the boreholes were backfilled with hydrated bentonite chips following sampling activities.

No significant amounts of derived wastes were generated during this investigation.

4.0 LABORATORY ANALYSIS

4.1 Laboratory Analysis

Jones Environmental Inc., under the direction of Partner, collected nine soil gas samples on August 24, 2018 (8 grab samples and a duplicate), which were transported on the same day to their fixed laboratory in Santa Fe Springs, California (California Department of Public Heath (CDPH) Environmental Laboratory Accreditation Program (ELAP) Certificate No. 2484), for methane analysis using American Society of Testing Materials (ASTM) Method D1946. A Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicate (LCSD) were analyzed with the soil gas samples. In addition, Instrument Blanks and Sampling Blanks were analyzed every 12 hours as prescribed by the method. All samples were injected into the GC/MS system within 6 hours of sampling and no contamination was noted in the blanks.

4.2 Laboratory Analytical Results

Methane was detected in one soil gas sample at a concentration of 1,200 parts per million per volume (ppmV): in the 5 foot hand auger probe at Boring B6, which was located along the north side of the southern retention pond. Methane was not detected in the other samples or in the duplicate sample at the subject property.

Refer to Table 2 for a summary of the soil gas sample laboratory analysis results. The complete laboratory analytical report is included in Appendix B.

5.0 DISCUSSION AND CONCLUSIONS

5.1 Regulatory Agency Guidance

Environmental Protection Agency (EPA) Regional Screening Levels (RSLs)

Environmental Protection Agency Regional Screening Levels (EPA RSLs) (formerly Preliminary Remediation Goals or PRGs) are generic, risk-based chemical concentrations developed by EPA Region 9 for use in initial screening-level evaluations. EPA RSLs combine human health toxicity values with standard exposure factors to estimate contaminant concentrations that are considered to be health protective of human exposures over a lifetime through direct-contact exposure pathways (e.g., via inhalation and/or ingestion of and/or dermal contact with impacted soil and/or indoor air). EPA RSLs are not legally enforceable standards, but rather are considered guidelines to evaluate if potential risks associated with encountered chemical impacts may warrant further evaluation.

Note: EPA has not developed EPA RSLs for methane in environmental media.

Department of Toxic Substances Control (DTSC) Attenuation Factor and Recommended Screening Levels

The DTSC Office of Human and Ecological Risk (HERO) developed California-Modified Recommended Screening Levels (DTSC RSLs) for soil and indoor air based on a review of 1) the differences in methodology between EPA PRGs/EPA RSLs 2) EPA RSL concentrations, and 3) recent toxicity values. Per DTSC, if a HERO value has not been developed, the EPA RSL can be used.

For soil gas, since soil gas detections are not immediately comparable to the indoor air quality guidelines within the RSLs, the DTSC issued recommended default attenuation factors of 0.05 (subslab sampling locations) and 0.002/0.001 (residential/commercial contaminant source sampling locations) for sites where the attenuation factor for the building slab is unknown or cannot be determined in the October 2011 document *Guidance for the Evaluation and Mitigation of Subsurface Gas Intrusion to Indoor Air*. With the subsurface contaminant concentrations and default attenuation factors, the associated contaminant concentrations in indoor air can be estimated as Calculated Residential and Commercial/Industrial Soil Gas Screening Levels (SGSLs).

DTSC has not developed RSLs for methane in environmental media. DTCS has developed two white papers on sampling of methane in California (*Evaluation of Biogenic Methane*, dated March 2012 and DTSC *Advisory on Methane Assessment and Common Remedies at School Sites*, dated June 2005). In addition, DTSC provides for soil gas sampling probe installation details in their *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*, dated October 2011. Partner adhered to all three of those documents when sampling the Site and evaluating the resulting data.

City of Ontario Building Department Regulations

The City of Ontario has published Methane Design Guidelines for "Projects in the New Model Colony". According to Building Department personnel, those guidelines are applicable to any building development on farm properties (including dairy farms) and is independent of the planned building use (i.e. residential or commercial/industrial). Therefore, Partner has confirmed that the City of Ontario *Methane Assessment for Projects in the New Model Colony* document (Methane Design Document) is applicable to the subject property.

The Methane Design Document indicates that a Methane Site Assessment is required of any parcels used as animal farms or composting / fertilizer farms, and that the survey must be completed within "all lots in potential methane areas". The Methane Site Assessment must be completed within properties 30 days after building footprints have been put in place.

The Methane Design Document further indicates that all buildings are to be installed with 10-mil methane barrier with sealed penetrations, and that for properties with methane concentrations over 15,000 ppmV, it is additionally required that any remediation required by the engineer after the Methane Site Assessment is completed. A copy of the regulation is attached as Appendix C.

5.2 Discussion

The purpose of the investigation was to investigate the soil vapor on the subject property for the presence of methane in order to provide support for the future commercial/industrial development. Methane was not detected above local regulatory screening levels at the subject property during this sampling event, as discussed above in Section 5.1.

During redevelopment of the subject property, it is possible that the City of Ontario will require further methane evaluation when the footprints of the proposed buildings are confirmed and approved. At that time, the appropriate mitigation measures, if any, will be determined.

5.3 Conclusions and Recommendations

Based on the results of this subsurface investigation, soil gas sampling has indicated no significant concentrations of methane in soil gas at the subject property.

Partner recommends no further assessment of methane in soil gas at the subject property at this time.

Partner notes that further testing requirements may be required by the City of Ontario during site development.

TABLES

PARTNER

Table 1: Summary of Investigation Scope
Alewyn Land
9031 Eucalyptus Avenue
Ontario, California 91762
Partner Project Number 18-221384.2
August 2018

Boring	Location	Depth	Analysis	Rationale
			Methane	
B1	Northeast corner of property	7 feet	X	Vapor points advanced to assess dairy farm pastures
B2	Western edge of property, on western access road	7 feet	X	
B3	Eastern cow pen	7 feet	X	
		15 feet	X	
B4	Central cow pen, north of retention ponds	7 feet	X	
B5	Northwest corner of central retention pond	7 feet	X	
		14 feet	X	
B6	Northern section of southern retention pond	7 feet	X	Vapor points advanced to assess dairy retention ponds

Table 2: Summary of Methane in Soil Gas
Alewyn Land
9031 Eucalyptus Avenue
Ontario, California 91762
Partner Project Number 18-221384.2
August 2018

USEPA Method	D1946		Methane
Sample Identification	Sample Depth	Date Collected	Concentration
Units	(feet bgs)		(ppmV)
B1	7	8/24/2018	ND<100
B2	7	8/24/2018	ND<100
B3	7	8/24/2018	ND<100
B3	15	8/24/2018	ND<100
B3 (Duplicate)	15	8/24/2018	ND<100
B4	7	8/24/2018	ND<100
B5	7	8/24/2018	ND<100
B5	14	8/24/2018	ND<100
B6	5	8/24/2018	1,200
Ambient Air		8/24/2018	ND<100
Ontario Methane Design Guidelines (Dairy Farm)			15,000

Notes:

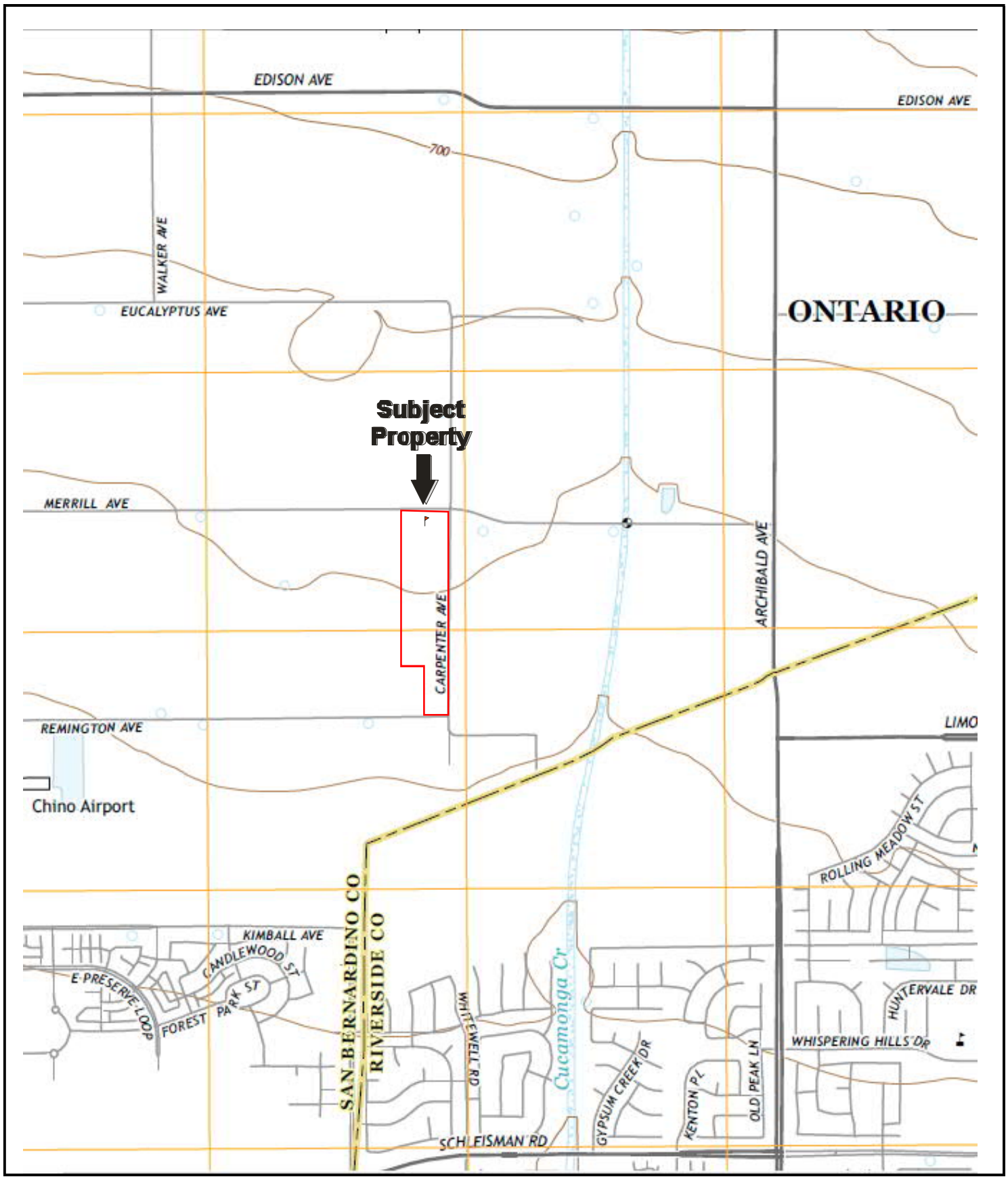
USEPA = United States Environmental Protection Agency

ppmV = parts per million by volume

ND = not detected above laboratory practical quantitation limits (PQLs) (100 ppmV)

FIGURES

PARTNER



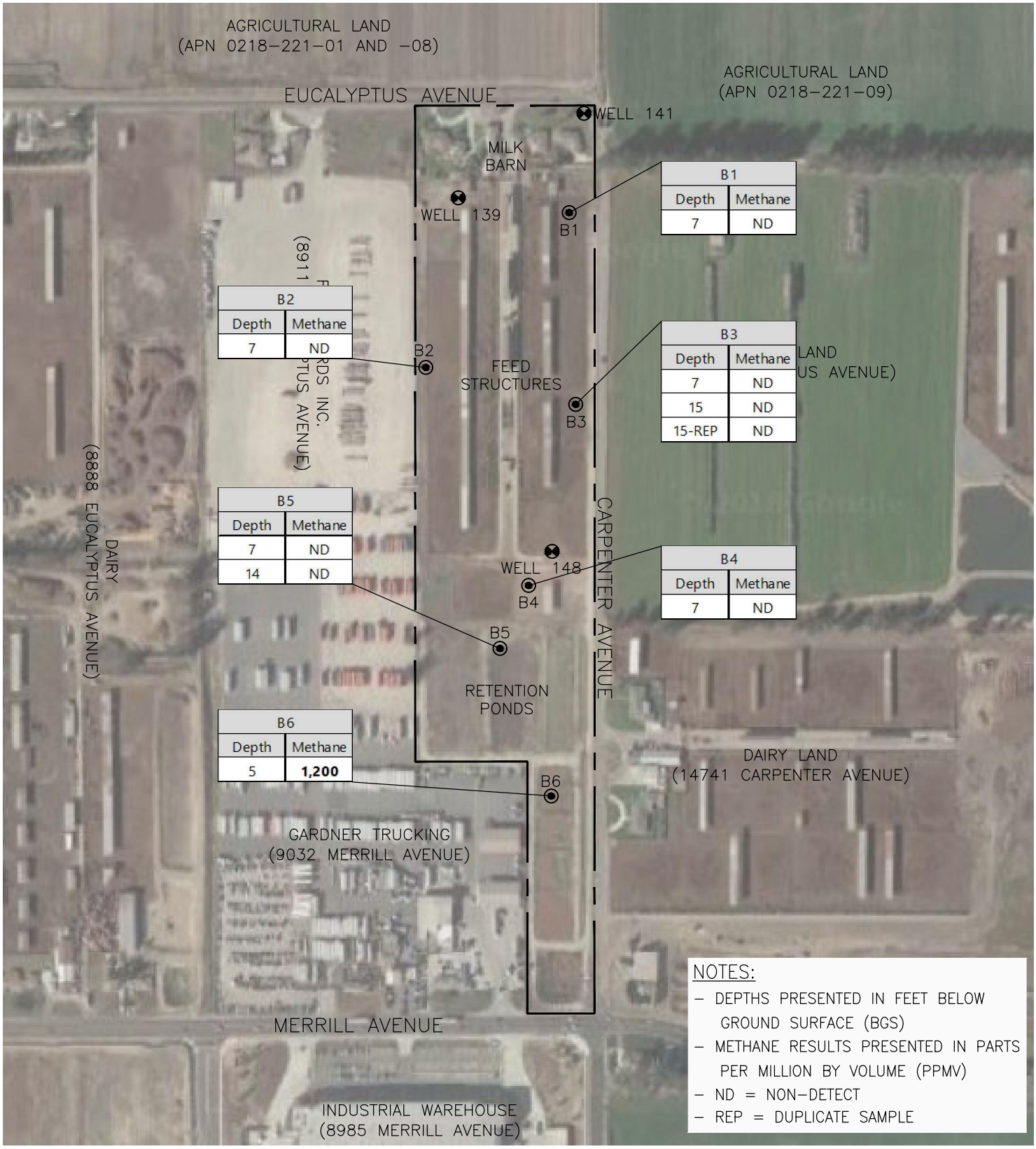
N

USGS 7.5 Minute Corona North, California Quadrangle
Created: 2012/Revised: 2015

KEY:
Subject Property

FIGURE 1: TOPOGRAPHIC MAP
Project No. 18-221384.2

PARTNER



AERIAL IMAGERY PROVIDED BY GOOGLE AND ITS LICENSORS © 2016

NOTES:

- DEPTHS PRESENTED IN FEET BELOW GROUND SURFACE (BGS)
- METHANE RESULTS PRESENTED IN PARTS PER MILLION BY VOLUME (PPMV)
- ND = NON-DETECT
- REP = DUPLICATE SAMPLE

LEGEND:

- PROPERTY LINE
- WATER WELLS ON-SITE
- SOIL VAPOR BORING LOCATIONS

N

150' 0' 150' 300'

APPROXIMATE SCALE

TITLE: SOIL GAS SAMPLE RESULTS FOR METHANE

FIGURE:	PREPARED BY:	DATE:	PROJECT NUMBER:
2	DH	AUGUST 2018	18-221384

ADDRESS:
ALEWYN LAND
9031 EUCALYPTUS AVENUE
ONTARIO, CALIFORNIA 91762

PARTNER
Engineering and Science, Inc.
2154 TORRANCE BOULEVARD, SUITE 200
TORRANCE, CALIFORNIA 90501

APPENDIX A: BORING LOGS

PARTNER

BORING LOG

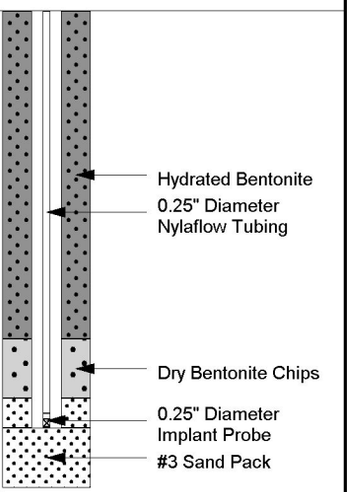
BORING: **B1**

TOTAL DEPTH: **8'**

PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Alewyn Land	DEPTH TO GROUNDWATER:	N/A
LOCATION:	Northeast corner of property	RIG TYPE:	Truck-Mounted Geoprobe
SITE ADDRESS:	9031 Euchalyptus Avenue	METHOD OF DRILLING:	Direct Push
	Ontario, CA 91762	SAMPLING METHODS:	Dual-Tube
JOB NO.:	18-221384	BORING DIAMETER:	2.25"
DATES DRILLED:	8/22/18	FIELD TECHNICIAN:	DH

DEPTH	SAMPLE	PID (ppm)	BLOW COUNT	USCS	SOIL TYPE	SOIL TYPE	BORING COMPLETION	WELL DESCRIPTION
0		0.0			SP	6" Dry Sand and Organic material SAND: Light brown, with silt, fine grained, poorly graded, dry		
5		0.0 0.0			SP	SAND: Light brown, with trace silt, fine grained, poorly graded, moist		
10		0.0						
15								
20								



NOTES: Drilling terminated at 8'

BORING LOG

BORING: **B2**

TOTAL DEPTH: **8'**

PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Alewyn Land	DEPTH TO GROUNDWATER:	N/A
LOCATION:	Western edge of property, on western access road	RIG TYPE:	Truck-Mounted Geoprobe
SITE ADDRESS:	9031 Euchalyptus Avenue	METHOD OF DRILLING:	Direct Push
	Ontario, CA 91762	SAMPLING METHODS:	Dual-Tube
JOB NO.:	18-221384	BORING DIAMETER:	2.25"
DATES DRILLED:	8/22/18	FIELD TECHNICIAN:	DH

DEPTH	SAMPLE	PID (ppm)	BLOW COUNT	USCS	SOIL TYPE	SOIL TYPE	BORING COMPLETION	WELL DESCRIPTION
0		0.0			SP	6" Dry Sand and Organic material SAND: brown, with trace silt, fine grained, poorly graded, moist	Hydrated Bentonite 0.25" Diameter Nylaflow Tubing	
5		0.0					Dry Bentonite Chips	
10		0.0					0.25" Diameter Implant Probe #3 Sand Pack	
15								
20								

NOTES: Drilling terminated at 8'

BORING LOG

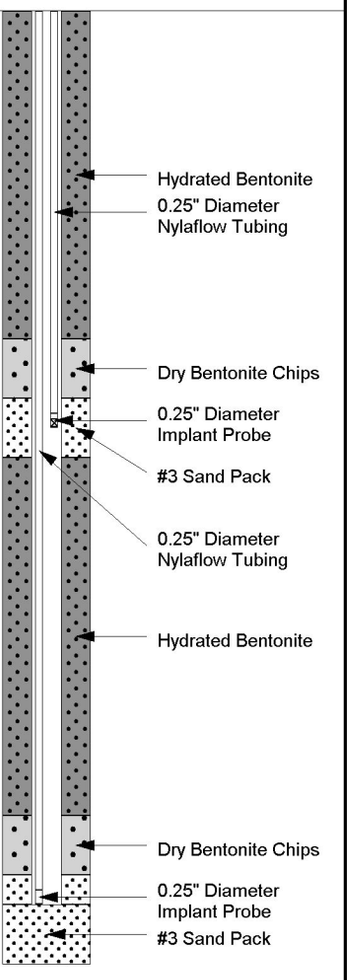
BORING: **B3**

TOTAL DEPTH: **16'**

PARTNER Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Alewyn Land	DEPTH TO GROUNDWATER:	N/A
LOCATION:	Eastern cow pen	RIG TYPE:	Truck-Mounted Geoprobe
SITE ADDRESS:	9031 Euchalyptus Avenue	METHOD OF DRILLING:	Direct Push
	Ontario, CA 91762	SAMPLING METHODS:	Dual-Tube
JOB NO.:	18-221384	BORING DIAMETER:	2.25"
DATES DRILLED:	8/22/18	FIELD TECHNICIAN:	DH

DEPTH	SAMPLE	PID (ppm)	BLOW COUNT	USCS	SOIL TYPE	SOIL TYPE	BORING COMPLETION	WELL DESCRIPTION
0						6" Dry Sand and Organic material		
		0.0			SP	SAND: grayish brown, fine to medium grained, poorly to medium graded, moist		
		0.0			SM	Silty SAND: light brown, with trace gravel, fine grained, poorly graded, dry		
5		0.2			SP	SAND: grayish brown, fine to medium grained, poorly to medium graded, moist		
		0.0						
		0			SW	SAND: gray, fine to coarse grained, medium to well graded, moist - with trace gravel at 10'		
10		0						
		0			SM	Silty SAND: brown, fine grained, poorly graded, moist		
15								
20								



NOTES: Drilling terminated at 16'

BORING LOG

BORING: **B4**

TOTAL DEPTH: **8'**

PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Alewyn Land	DEPTH TO GROUNDWATER:	N/A
LOCATION:	Central cow pen, north of retention ponds	RIG TYPE:	Truck-Mounted Geoprobe
SITE ADDRESS:	9031 Euchalyptus Avenue	METHOD OF DRILLING:	Direct Push
	Ontario, CA 91762	SAMPLING METHODS:	Dual-Tube
JOB NO.:	18-221384	BORING DIAMETER:	2.25"
DATES DRILLED:	8/22/18	FIELD TECHNICIAN:	DH

DEPTH	SAMPLE	PID (ppm)	BLOW COUNT	USCS	SOIL TYPE	SOIL TYPE	BORING COMPLETION	WELL DESCRIPTION
0		0.0				6" Dry Sand and Organic material	Hydrated Bentonite	
						SAND: brown, with trace silt, fine grained, poorly graded, moist	0.25" Diameter Nylaflow Tubing	
		0.0			SP			
5							Dry Bentonite Chips	
		0.0				- with silt from 7 to 8 feet	0.25" Diameter Implant Probe	
							#3 Sand Pack	
10								
15								
20								

NOTES: Drilling terminated at 8'

BORING LOG

BORING: **B5**

TOTAL DEPTH: **16'**

PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Alewyn Land	DEPTH TO GROUNDWATER:	N/A
LOCATION:	Northwest corner of central retention pond	RIG TYPE:	Truck-Mounted Geoprobe
SITE ADDRESS:	9031 Euchalyptus Avenue	METHOD OF DRILLING:	Direct Push
	Ontario, CA 91762	SAMPLING METHODS:	Dual-Tube
JOB NO.:	18-221384	BORING DIAMETER:	2.25"
DATES DRILLED:	8/22/18	FIELD TECHNICIAN:	DH

DEPTH	SAMPLE	PID (ppm)	BLOW COUNT	USCS	SOIL TYPE	SOIL TYPE	BORING COMPLETION	WELL DESCRIPTION
0		0.0				6" Dry Sand and Organic material		
						SAND: gray, fine grained, medium graded, loose, moist		Hydrated Bentonite 0.25" Diameter Nylaflow Tubing
		0.0						
5		0.0			SP	- fine to medium grained, 6' to 8'		Dry Bentonite Chips 0.25" Diameter Nylaflow Tubing
		0.2				- with trace silt and damp, 9' to 12'		0.25" Diameter Implant Probe #3 Sand Pack
10								Hydrated Bentonite
		0			SP	SAND: brown, with silt, fine grained, poorly to medium graded, damp		Dry Bentonite Chips 0.25" Diameter Implant Probe
15								#3 Sand Pack
20								

NOTES: Drilling terminated at 16'
Boring walls collapsed so probe was set at 14'

BORING LOG

BORING: **B6**

TOTAL DEPTH: **5.2'**

PARTNER
Engineering and Science, Inc.
2154 Torrance Boulevard, Suite 200
Torrance, California 90501

PROJECT INFORMATION		DRILLING INFORMATION	
PROJECT:	Alewyn Land	DEPTH TO GROUNDWATER:	N/A
LOCATION:	Northern section of southern retention pond	RIG TYPE:	N/A
SITE ADDRESS:	9031 Euchalyptus Avenue	METHOD OF DRILLING:	Hand Auger
	Ontario, CA 91762	SAMPLING METHODS:	Hand Auger
JOB NO.:	18-221384	BORING DIAMETER:	2.25"
DATES DRILLED:	8/22/18	FIELD TECHNICIAN:	DH

DEPTH	SAMPLE	PID (ppm)	BLOW COUNT	USCS	SOIL TYPE	SOIL TYPE	BORING COMPLETION	WELL DESCRIPTION
0		0.0			SP	SAND: dark gray, with silt, fine grained, poorly graded, moist	Hydrated Bentonite	
		0.0					0.25" Diameter Nylaflow Tubing	
5					SP	SAND: dark greenish gray, with silt, fine grained, poorly graded, wet	Dry Bentonite Chips	
							0.25" Diameter Implant Probe	
10							#3 Sand Pack	
15								
20								

NOTES: Drilling terminated at 5.2'

APPENDIX B: LABORATORY ANALYTICAL REPORT FOR SOIL GAS

PARTNER

JONES ENVIRONMENTAL, INC.

714-449-9937
562-646-1611
805-399-0060

11007 FOREST PLACE
SANTA FE SPRINGS, CA 90670
WWW.JONESENV.COM

JONES ENVIRONMENTAL

LABORATORY RESULTS

Client:	Partner Engineering & Science, Inc.	**Report date:**	8/27/2018
Client Address:	1761 E Garry Ave Santa Ana, CA 92705	**JEL Ref. No.:** **Client Ref. No.:**	ST-12533 18-221384
Attn:	Kathy Lehnus	**Date Sampled:** **Date Received:**	8/24/2018 8/24/2018
Project Name:	Alewyn Land	**Date Analyzed:**	8/24/2018
Project Address:	9031 Eucalyptus Ave. Ontario, CA 92762	**Physical State:**	Soil Gas

ANALYSES REQUESTED

1. ASTM D1946 – Fixed Gases

Sampling – Soil Gas samples were collected in Tedlar bags.

The sampling rate was approximately 200 cc/min, except if noted differently on the chain of custody record, using a Tedlar Bag. Purging was completed using a pump set at approximately 200 cc/min, except if noted differently on the chain of custody record. A default of 3 purge volumes was used as recommended by July 2015 DTSC/RWQCB guidance documents.

Prior to purging and sampling of soil gas at each point, a shut-in test was conducted to check for leaks in the above ground fittings. The shut-in test was performed on the above ground apparatus by evacuating the line to a vacuum of 100 inches of water, sealing the entire system and watching the vacuum for at least one minute. A vacuum gauge attached in parallel to the apparatus measured the vacuum. If there was any observable loss of vacuum, the fittings were adjusted as needed until the vacuum did not change noticeably. The soil gas sample was then taken.

No flow conditions occur when a sampling rate greater than 10 mL/min cannot be maintained without applying a vacuum greater than 100 inches of water to the sampling train. The sampling train is left at a vacuum for no less than three minutes. If the vacuum does not subside appreciably after three minutes, the sample location is determined to be a no flow sample.

Analytical – Soil Gas samples were analyzed using ASTM D1946 by GC/TCD. A duplicate/replicate sample was analyzed each day of the sampling activity. All samples were injected into the GC/MS system within 6 hours of sampling.

Approval:

Angela Haar, Ph. D.
Mobile Lab Manager

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Partner Engineering & Science, Inc.	**Report date:**	8/27/2018
Client Address:	1761 E Garry Ave	**Jones Ref. No.:**	ST-12533
	Santa Ana, CA 92705	**Client Ref. No.:**	18-221384
Attn:	Kathy Lehnus	**Date Sampled:**	8/24/2018
		Date Received:	8/24/2018
Project:	Alewyn Land	**Date Analyzed:**	8/24/2018
Project Address:	9031 Eucalyptus Ave.	**Physical State:**	Soil Gas
	Ontario, CA 92762		

ASTM D1946 – Methane

Sample ID:	**B4-7'**	**B5-7'**	**B5-14'**	**B6-5'**	**B2-7'**		
Jones ID:	**ST-12533-01**	**ST-12533-02**	**ST-12533-03**	**ST-12533-04**	**ST-12533-05**	**Reporting Limit**	**Units**
Methane (CH_4)	ND	ND	ND	**1200**	ND	100	ppmV
Dilution Factor	1	1	1	1	1		
	ASTM-082418_01	**ASTM-082418_01**	**ASTM-082418_01**	**ASTM-082418_01**	**ASTM-082418_01**		

ND = Not Detected

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Partner Engineering & Science, Inc.	**Report date:**	8/27/2018
Client Address:	1761 E Garry Ave	**Jones Ref. No.:**	ST-12533
	Santa Ana, CA 92705	**Client Ref. No.:**	18-221384
Attn:	Kathy Lehnus	**Date Sampled:**	8/24/2018
		Date Received:	8/24/2018
Project:	Alewyn Land	**Date Analyzed:**	8/24/2018
Project Address:	9031 Eucalyptus Ave.	**Physical State:**	Soil Gas
	Ontario, CA 92762		

ASTM D1946 – Methane

Sample ID:	**B3-15'**	**B3-15' REP**	**B3-7'**	**B1-7'**		
Jones ID:	**ST-12533-06**	**ST-12533-07**	**ST-12533-08**	**ST-12533-09**	**Reporting Limit**	**Units**
Methane (CH_4)	ND	ND	ND	ND	100	ppmV
Dilution Factor	1	1	1	1		
	ASTM-082418_01	**ASTM-082418_01**	**ASTM-082418_01**	**ASTM-082418_01**		

ND = Not Detected

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JONES ENVIRONMENTAL
LABORATORY RESULTS

Client:	Partner Engineering & Science, Inc.	**Report date:**	8/27/2018
Client Address:	1761 E Garry Ave	**Jones Ref. No.:**	ST-12533
	Santa Ana, CA 92705	**Client Ref. No.:**	18-221384
Attn:	Kathy Lehnus	**Date Sampled:**	8/24/2018
		Date Received:	8/24/2018
Project:	Alewyn Land	**Date Analyzed:**	8/24/2018
Project Address:	9031 Eucalyptus Ave.	**Physical State:**	Soil Gas
	Ontario, CA 92762		

ASTM D1946 – Methane

Sample ID:	**Ambient Air**		
Jones ID:	**AA-082418_01**	**Reporting Limit**	**Units**
Methane (CH_4)	ND	100	ppmV
Dilution Factor	1		
	ASTM-082418_01		

ND = Not Detected

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JONES ENVIRONMENTAL
QUALITY CONTROL INFORMATION

Client:	Partner Engineering & Science, Inc.	**Report date:**	8/27/2018
Client Address:	1761 E Garry Ave Santa Ana, CA 92705	**Jones Ref. No.:** **Client Ref. No.:**	ST-12533 18-221384
Attn:	Kathy Lehnus	**Date Sampled:** **Date Received:**	8/24/2018 8/24/2018
Project:	Alewyn Land	**Date Analyzed:**	8/24/2018
Project Address:	9031 Eucalyptus Ave. Ontario, CA 92762	**Physical State:**	Soil Gas

ASTM D1946 – Methane

GC#: ASTM-082418_01

Jones ID:	**CCV-082418_01**	**CCVD-082418_01**		
Parameter	CCV Recovery (%)	CCVD Recovery (%)	RPD	Acceptability Range (%)
Methane (CH_4)	100%	100%		60 - 140

LCS = Lab Control Sample
LCSD = Lab Control Sample Duplicate
RPD = Relative Percent Difference; Acceptability range for RPD is ≤ 15%

JONES ENVIRONMENTAL, INC.

11007 Forest Pl.
Santa Fe Springs, CA 90670
(714) 449-9937
Fax (714) 449-9685
www.jonesenv.com

Soil-Gas Chain of Custody Record

Client: Partners
Project Name: Alewyn Land
Project Address: 9031 Eucalyptus Ave, Ontario, CA 92762
Email:
Phone: 310-615-4500
Report To: Kathy Lehrasis
Sampler: Chris Jones

Date: 08/24/18
Client Project #: 18-221384

Purge Number: □ 1P ☒ 3P □ 7P □ 10P
Shut-In Test: (Y) N
Flow Rate: ~200
If different than above, see Notes.

Turn Around Requested:
- □ Immediate Attention
- □ Rush 24 Hours
- □ Rush 48 Hours
- □ Rush 72 Hours
- □ Normal
- □ Mobile Lab

Tracer:
- □ n-pentane
- □ n-hexane
- □ n-heptane
- □ Helium
- □ 1,1-DFA
- □ _____

Reporting Limits Requested: □ Commercial □ Residential

Units:

Report Options
EDD ____
EDF* - 10% Surcharge ____
*Global ID ____

LAB USE ONLY
Jones Project # ST-12533
Page 1 of 1
Sample Condition as Recieved: Sealed □ yes □ no
Sample Container: Tedlar
If different than above, see Notes.

Sample ID	Purge Number	Purge Volume (mL)	Date	Pump Used	Magnehelic	Laboratory Sample ID	Cannister ID	Cannister Start Pressure	Cannister End Pressure	Sampling Start Time	Sampling End Time	Sample Matrix: Soil Gas (SG), Air (A)	EPA 8260B Methane	EPA TO-15	Magnehelic Vacuum (In/H_2O)	Number of Containers	Notes & Special Instructions
B4-7'	3	08/24	08/24			ST-12533-01					0723	SG	X		20	1	0.0"
B5-7'	3		08/24			ST-12533-02					0735	SG	X		20	1	0.0"
B5-14'	3		08/24			ST-12533-03					0751	SG	X		20	1	0.0"
B6-5'	3		08/24			ST-12533-04					0805	SG	X		20	1	0.0"
B2-7'	3		08/24			ST-12533-05					0827	SG	X		20	1	0.0"
B3-15	3		08/24			ST-12533-06					0851	SG	X		20	1	0.0"
B3-15 REP	3		08/24			ST-12533-07					0851	SG	X		20	1	0.0"
B3-7	3		08/24			ST-12533-08					0847	SG	X		20	1	0.0"
B1-7	3		08/24			ST-12533-09					0922	SG	X		100	1	LOW FLOW 0.0"

Relinquished By (Signature)	Printed Name	Received By (Signature)	Printed Name		
David Horrell	DAVID HORRELL		Chris Jones		
Company	Date: Time:	Company	Date: Time:		
Partner ESI	8/24/18 0930	JEL	08/24/18 0930		
Relinquished By (Signature)	Printed Name	Received By Laboratory (Signature)	Printed Name		
	Chris Jones				
Company	Date: Time:	Company	Date: Time:		
JEL	08/24/18 0940				

9 Total Number of Containers

Client signature on this Chain of Custody form constitutes acknowledgement that the above analyses have been reqested, and the information provided herein is correct and accurate.

APPENDIX C: CITY REGULATORY INFORMATION

PARTNER

City of Ontario

BUILDING DEPARTMENT

303 EAST "B' STREET, CIVIC CENTER, ONTARIO, CALIFORNIA91764-4196
TELEPHONE: (909) 395-2023 FAX: (909) 395-2180

METHANE ASSESSMENT FOR PROJECTS IN THE NEW MODEL COLONY

Applicants shall provide for the Building Department's review and approval, a methane assessment report addressing whether the property in questions was ever used as a dairy, poultry ranch, hog ranch, livestock feed operation site, manure stockpile site, manure/livestock burial site, run-off ponds, or for any other purpose that might result in the deposition of materials which might produce methane.

The report shall be prepared by a licensed engineer or licensed geologist and shall include the following:

- Historic aerial photos and historic topographic map review.
- Interviewing the owner/land managers for possible locations of potential methane generation areas.
- Site reconnaissance to determine the current site usage and conditions.
- Identifying potential methane areas.
- A proposed scope of work for post-grading methane investigation based on the historical study.

This report may be included as part of the soils and geology report and shall be submitted to the Building Department for review and approval at the time building permit applications are filed.

All lots in potential methane areas identified in the Methane Site Assessment report shall be tested for the presence of any methane and its concentration 30 days after building pads are graded and created.

A report, prepared by a licensed engineer or geologist and separate from the Methane Site Assessment report, summarizing the methane test conducted, the location/lot where methane is found and its concentration, and the recommended mitigation measures shall be submitted to the Building Department for review and approval. This test report could be a standalone report or be a part of the soils and geology report. This test report should be submitted together with building plans when permit applications are filed, or thereafter as soon as it is available. No building permit will be issued until the test report is approved by the Building Department, and the lots with methane and any required mitigation measures are shown on building plans.

METHANE DESIGN GUIDELINES

Measured Methane Concentration (ppm)	Minimum Mitigation Guidelines
< 15,000	Provide a 10-mil moisture barrier. Seal utility conduits and other penetration in an approved method.
> 15,000	Provide a 10-mil moisture barrier. Seal utility conduits and other penetration in an approved method. Also include any remediation required by the Engineer of record.
Waste, Burial Site, Pond, Lowland	Require methane report prepared by a licensed engineer or geologist on required remediation.